What is claimed is:

1. An optical switch comprising:

an input optical fiber;

an output optical fiber;

a mirror that is positionable to reflect a lightwave signal from the input optical fiber into the output optical fiber; and

a control circuit to sense a misalignment error and adjust the mirror to correct the misalignment error.

2. The optical switch of claim 1, wherein:

the mirror that is positionable is inclinable;

the misalignment error is an inclination misalignment error; and

the control circuit adjusts the mirror to correct the inclination misalignment error.

3. The optical switch of claim 1, wherein:

the mirror that is positionable is rotatable;

the misalignment error is a rotation misalignment error; and

the control circuit adjusts the mirror to correct the rotation misalignment error.

4. The optical switch of claim 1, wherein:

the mirror that is positionable is inclinable and rotatable;

the misalignment error includes an inclination misalignment error and a rotation misalignment error; and

the control circuit adjusts the mirror to correct the inclination misalignment error and the rotation misalignment error.

5. The optical switch of claim 1, further comprising a substrate on which the mirror is hingedly mounted, wherein:

the control circuit includes input and output calibration fibers co-parallel with respective input and output optical fibers;

the input calibration fiber is displaced with respect to the input optical fiber, both fibers being in a first plane that is perpendicular to a plane of the substrate; and

the output calibration fiber is displaced with respect to the output optical fiber, both fibers being in a second plane that is perpendicular to the plane of the substrate.

6. The optical switch of claim 5, wherein the control circuit further includes:

a receiver portion to detect an optical calibration signal from the output calibration fiber; and

a controller portion to adjust the mirror to correct the misalignment error according to the detected optical calibration signal.

7. The optical switch of claim 6, wherein the input optical fiber, the output optical fiber, the input calibration fiber, the output calibration fiber, the receiver portion and the mirror are arranged so that when the receiver portion indicates that the mirror optimally reflects the optical calibration signal into the output calibration fiber, the mirror simultaneously optimally reflects the lightwave signal from the input optical fiber into the output optical fiber.

8. The optical switch of claim 5, wherein the output calibration fiber constitutes a first output calibration fiber and the control circuit further includes:

a second output calibration fiber co-parallel with the first output calibration fiber, the second output calibration fiber being displaced with respect to the first output calibration fiber, both fibers being in the second plane;

a receiver portion to detect first and second optical calibration signals from the respective first and second output calibration fibers; and

a controller portion to adjust the mirror to correct the misalignment error according to the detected first and second optical calibration signals.

9. The optical switch of claim 5, wherein the first and second planes are substantially perpendicular.

10. The optical switch of claim 3, further comprising a substrate on which the mirror is rotatably mounted, wherein:

the control circuit includes input and output calibration fibers co-parallel with respective input and output optical fibers;

the input calibration fiber is displaced with respect to the input optical fiber, both fibers being in a first plane that is perpendicular to a plane of the substrate; and

the output calibration fiber is displaced with respect to the output optical fiber, both fibers being in a second plane that is perpendicular to the plane of the substrate.

11. The optical switch of claim 10, wherein the control circuit further includes:

a receiver portion to detect an optical calibration signal from the output calibration fiber; and

a controller portion to adjust the mirror to correct the rotation misalignment error according to the detected optical calibration signal.

12. The optical switch of claim 11, wherein the input optical fiber, the output optical fiber, the input calibration fiber, the output calibration fiber, the receiver portion and the mirror are arranged so that when the receiver portion indicates that the mirror optimally reflects the optical calibration signal into the output calibration fiber, the mirror simultaneously optimally reflects the lightwave signal from the input optical fiber into the output optical fiber.

13. The optical switch of claim 10, wherein the output calibration fiber constitutes a first output calibration fiber and the control circuit further includes:

a second output calibration fiber co-parallel with the first output calibration fiber, the second output calibration fiber being displaced with respect to the first output calibration fiber, both fibers being in a third plane that is co-parallel with the plane of the substrate;

a receiver portion to detect first and second optical calibration signals from the respective first and second output calibration fibers; and

a controller portion to adjust the mirror to correct the rotation misalignment error according to the detected first and second optical calibration signals.

14. The optical switch of claim 10, wherein the first and second planes are substantially perpendicular.

15. The optical switch of claim 4, further comprising a substrate on which the mirror is hingedly and rotatably mounted, wherein:

the control circuit includes input and output calibration fibers co-parallel with respective input and output optical fibers;

the input calibration fiber is displaced with respect to the input optical fiber, both fibers being in a first plane that is perpendicular to a plane of the substrate; and

the output calibration fiber is displaced with respect to the output optical fiber, both fibers being in a second plane that is perpendicular to the plane of the substrate.

16. An optical switch comprising:

an input switch fiber that includes an input core and an input cladding;

an output switch fiber that includes an output core and an output cladding;

an input GRISM to insert a calibration signal into the input cladding;

a mirror that is adjustable, the mirror reflecting a lightwave signal from the input core into the output core and reflecting the calibration signal from the input cladding into the output cladding; and

an output GRISM to extract the calibration signal from the output cladding.

17. The optical switch of claim 16, wherein an index of refraction of the input core is substantially equal to an index of refraction of the input GRISM at a wavelength of the lightwave signal.

18. The optical switch of claim 16, wherein an index of refraction of the output core is substantially equal to an index of refraction of the output GRISM at a wavelength of the lightwave signal.

19. The optical switch of claim 18, wherein an index of refraction of the input core is substantially equal to an index of refraction of the input GRISM at the wavelength of the lightwave signal.

20. The optical switch of claim 19, wherein the index of refraction of the input core is substantially equal to the index of refraction of the output core.

21. The optical switch of claim 16, wherein the input GRISM includes:

a first surface through which the calibration signal enters that is substantially perpendicular to a transit direction of the calibration signal in the input GRISM; and

a second surface through which the calibration signal exits that is oblique to the transit direction of the calibration signal in the input GRISM and is oblique to a transit direction of the lightwave signal in the input core, the second surface being oriented so that the transit direction of the calibration signal in the input GRISM is diffracted to a cladding transit direction that is parallel to the transit direction of the lightwave signal in the input core.

22. The optical switch of claim 21, wherein:

the input cladding includes an oblique surface that confronts the second surface; and

the oblique surface of the input cladding has etched thereon a diffraction grating to diffract the calibration signal in the input GRISM into the cladding transit direction at a wavelength of the calibration signal.

23. The optical switch of claim 21, wherein a ratio of an index of refraction of the input cladding and an index of refraction of the input GRISM at a wavelength of the calibration signal causes the calibration signal in the input GRISM to diffract to the cladding transit direction.

24. The optical switch of claim 21, wherein:

the input cladding includes an oblique surface that confronts the second surface;

the oblique surface of the input cladding has etched thereon a diffraction grating; and

a ratio of an index of refraction of the input cladding and an index of refraction of the input GRISM at a wavelength of the calibration signal and the diffraction grating diffracts the calibration signal in the input GRISM into the cladding transit direction at a wavelength of the calibration signal.

25. The optical switch of claim 16, wherein a cladding transit direction of the calibration signal in the output cladding is parallel to a core transit direction of the lightwave signal in the output core, and wherein the output GRISM includes:

a first surface through which the calibration signal exits that is substantially perpendicular to a transit direction of the calibration signal in the output GRISM; and

a second surface through which the calibration signal enters that is oblique to the transit direction of the calibration signal in the output GRISM and is oblique to the core transit direction, the second surface being oriented so that the transit direction of the calibration signal in the output GRISM is diffracted to the cladding transit direction.

26. The optical switch of claim 25, wherein:

the output cladding includes an oblique surface that confronts the second surface of the output GRISM; and

the oblique surface of the output cladding has etched thereon a diffraction grating to diffract the calibration signal in the output cladding into the transit direction of the calibration signal in the output GRISM.

27. The optical switch of claim 25, wherein a ratio of an index of refraction of the output cladding and an index of refraction of the output GRISM at a wavelength of the calibration signal causes the calibration signal in the output cladding to diffract to the transit direction of the calibration signal in the output GRISM.

28. The optical switch of claim 25, wherein:

the output cladding includes an oblique surface that confronts the second surface of the output GRISM;

the oblique surface of the output cladding has etched thereon a diffraction grating; and

a ratio of an index of refraction of the output cladding and an index of refraction of the output GRISM at a wavelength of the calibration signal and the diffraction grating diffracts the calibration signal in the output cladding to the transit direction of the calibration signal in the output GRISM at a wavelength of the calibration signal.

29. The optical switch of claim 16, further comprising a control circuit to sense a misalignment error based on the extracted calibration signal, the misalignment error including at least one of an inclination misalignment error and a rotation misalignment error, the control circuit including circuitry to adjust the mirror to correct the misalignment error.

30. An optical switch comprising:

an input optical fiber;

an output optical fiber;

a rotatable mirror that has diffraction gratings etched thereon, the mirror reflecting a lightwave signal from the input optical fiber into the output optical fiber; and

a control circuit to adjust a rotation angle of the mirror to select a wavelength that can be diffracted into the output optical fiber according to a spacing of the diffraction gratings.

31. A method comprising steps of:

reflecting a lightwave signal from an input optical fiber off an inclinable mirror into an output optical fiber;

sensing an inclination misalignment error; and

adjusting the mirror to correct the inclination misalignment error.

32. A method comprising steps of:

reflecting a lightwave signal from an input optical fiber off a rotatable mirror into an output optical fiber;

sensing a rotation misalignment error; and

adjusting the mirror to correct the rotation misalignment error.

33. A method comprising steps of:

reflecting a lightwave signal from an input optical fiber off an inclinable and rotatable mirror into an output optical fiber;

sensing an inclination misalignment error and a rotation misalignment error; and

adjusting the mirror to correct the inclination misalignment error and the rotation misalignment error.

34. A method comprising steps of:

propagating a lightwave signal in an input core of an input switch fiber;

inserting a calibration signal through an input GRISM into an input cladding of the input switch fiber;

reflecting the lightwave signal from the input core off an adjustable mirror into an output core of an output switch fiber while reflecting the calibration signal from the input cladding off the adjustable mirror into an output cladding of the output switch fiber;

extracting the calibration signal in the output cladding through an output GRISM;

sensing a misalignment error based on the extracted calibration signal, the misalignment error including at least one of an inclination misalignment error and a rotation misalignment error; and

adjusting the mirror to correct the misalignment error.